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Incorporation of Kenaf Core Fibers into Low Density Polyethylene/ Thermoplastic Sago Starch Blends Exposed to Natural Weathering (Article)

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Abstract

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The landfill disposal of a high volume of plastics that take a long time to decompose has led to a tremendous environmental problem. Incorporation of natural polymers and fibers into synthetic polymers accelerates the degradation rate by exposure to atmospheric agents such as sunlight, temperature and rainfall. In this work, thermoplastic sago starch (TPSS) and kenaf core fibers (KCF) from agricultural feed stocks were blended with low density polyethylene (LDPE) for natural weathering studies. The melt-mixed and compressed composite sheets had fiber loadings ranging from 0 to 40 wt.%, and were exposed to natural weathering conditions for a period of 3 and 6 months. The deterioration in mechanical, thermal, morphological and weight properties were investigated.

Author keywords

degradation kenaf Thermoplastic sago starch

Indexed keywords

Engineering controlled terms: Degradation Fibers Hemp Kenaf fibers Natural polymers Plastics Polyethylenes Reinforced plastics Textile blends Weathering

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